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1	152	multimedia and animated and character and transparent	USPAT	2004/06/10 10:19	(1)
2	0	1 and 345/765-768 and 345/790-791 and 345/802 and 345/808 and 345/706	USPAT	2004/06/10 10:21	(1)
3	0	345/765-768 and 345/790-791 and 345/802 and 345/808 and 345/706	USPAT	2004/06/10 10:22	(1)
4	0	345/765-768.ccls. and 345/790-791.ccls. and 345/802.ccls. and 345/808.ccls. and 345/706.ccls.	USPAT	2004/06/10 10:22	(1)
5	588	345/765-768.ccls. or 345/790-791.ccls. or 345/802.ccls. or 345/808.ccls. or 345/706.ccls.	USPAT	2004/06/10 10:23	
6	4	1 and 5	USPAT	2004/06/10 10:45	(1)
7	38	7 and transparent and window	USPAT	2004/06/10 10:50	(1)
8	4	8 and animated	USPAT	2004/06/10 10:50	(1)
9	221	@pd<19981111 and 5	USPAT	2004/06/10 11:01	(2)
10	270	@pd<19991111 and 5	USPAT	2004/06/10 11:01	(2)

(1) considered all

(2) considered fi, abz, clms, inv, snc, figs

tools require programs written in more general programming languages such as C for the execution of hot spot actions or to maintain application data structures. The authoring tool simplifies the job of programming a multimedia hyperlinked application by giving a programmer ready made modules for multimedia such as animation and sound playback, and providing an interface that makes it easier to view, cut, and paste graphics and sound developed elsewhere, and to link the display of graphic scenes or execution of arbitrary actions to hotspots. Nevertheless, using these tools it normally takes many hours or months and programming by skilled artisans to develop a hypermedia application.

#### SUMMARY OF THE INVENTION

It is therefore an object of the invention to provide a graphical user interface for an operating system in which different directories and associated with different pictorial graphics so that the user is presented with a graphical indication of which directory is the currently selected directory.

It is also an object of the invention to provide a graphical user interface for an operating system in which the user can link or append new pictorial graphics to directories.

It is also an object of the invention to provide a graphical user interface for an operating system in which icons are not limited to a preset size and shape.

It is another object of the invention to provide a graphical user interface in which the contents of a directory are displayed as pictorial elements in a pictorial graphic image which identifies the directory.

It is still another object of the invention to provide a graphical user interface in which a pictorial graphic image which identifies a directory is scrollable in at least two directions.

It is yet another object of the invention to provide a graphical user interface in which the user can create new icons by selecting portions of a pictorial graphic image which identifies a directory.

It is also an object of the invention to provide a graphical user interface in which icons are animated.

It is another an object of the invention to provide a graphical user interface in which icon animations may be unique to an icon and an operating system action.

It is also an object of the invention to provide a graphical user interface for an operating system in which icon animations are generated automatically by the interface.

It is another object of the invention to provide a graphical user interface in which operating system actions are represented by an animated character.

It is still another object of the invention to provide a graphical user interface in which different operating system actions are represented by different animations.

It is yet another object of the invention to provide a graphical user interface in which different operating system actions are represented by different animations which are accompanied by sound output.

It is also an object of the invention to provide a graphical user interface in which different operating system actions are represented by different animations which are accompanied by sound output and the animations and sound are metaphorical of the operating system actions.

It is another object of the invention to provide a graphical user interface in which the user initiates operating system commands and other commands by controlling the actions of an animated character.

It is still another object of the invention to provide a graphical user interface in which the user initiates operating system commands and other commands by controlling the actions of an animated character with a button based input device such as a game pad controller device.

It is also an object of the invention to provide a graphical user interface having all of the above described features and in which the graphics, icons, sounds, animated character, and animations are definable by the user.

It is another object of the invention to provide a graphical user interface in which user input is derived from a minimal button based device such as a gamepad controller.

It is still another object of the invention to provide a graphical user interface in which user input is derived from a minimal button based device and where the mapping of keycodes is augmented with context and argument semantics so that a single button press will have a different effect at different times.

It is also an object of the invention to provide data structures, internal procedures and user level commands which effect a graphical user interface as described above.

In accord with these objects which will be discussed in detail below, the pictorial user interface of the present invention includes a pictorial image which is linked to a file directory and which identifies the file directory. Objects in the pictorial image are icons linked to file objects and an animated character is overlaid on the pictorial image. User input causes movement of the animated character relative to the pictorial image and animates objects in the pictorial image. Input from the user is preferably through a limited input device such as a gamepad controller, a mouse, or by using a limited number of keys on a normal keyboard. Input signals are mapped according to keycode identical command sets, context arguments and selection arguments.

There are preferably three classes of commands: OS Commands, Pictorial Object Commands, Interface Utility Commands. OS Commands correspond to the operating system commands of the underlying operating system and include such commands a copy\_file, change\_directory, display\_directory, etc. Pictorial Object Commands are used to define and modify the pictorial user interface. Such commands include link\_directory\_image, define\_icon, etc. Interface Utility Commands are used to change and maintain the runtime state of various portions of the pictorial interface. Some of these commands allow the user to select and direct input or output for use with OS commands, e.g. collect\_file\_object, select\_collected\_object, etc. Other of these commands allow the user to change the settings of the interface, e.g. make\_icons\_invisible. Context and selection arguments typically relate to files, directories, icons, or pictures which are arguments for certain commands. Some commands may only use one argument. Other commands may use two arguments or no arguments.

Sequences or raw input signals are interpreted as "tokens" and are mapped to keycode-identical command sets. When a meaningful input signal is interpreted, the location of the animated character relative to the pictorial image is used to identify an icon and its associated file object as an argument. The combination of an argument and a key-code identical command set is mapped to a command code that uniquely defines a user-level command. The command code is used to access a basic execution unit which includes an executable command and a set of animations. The basic execution unit preferably includes a prologue animation, a command script, and an epilogue animation. The prologue animation is a way of echoing input to the user. If the prologue animation is not

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